



KLINGER®
Mzansi



KLINGER Gaskets

- » Gas & Vacuum
- » High Integrity
- » Chemical
- » Extreme Temperature
- » High Temperature and Pressure
- » Economy
- » General Purpose



GLOBAL LEADER

LOCAL PARTNER

KLINGER Gaskets - Select the correct product for your application.



Sigraflex® Hochdruck, high integrity multilayer laminate of exfoliated graphite and 316SS. A sealing material with excellent thermal and chemical resistance. Used in chemical, petrochemical and power generation applications.
Temperature: -250°C to 450°C | **Pressure:** 250bar



KLINGERTop-chem 2003, premium grade high compressibility modified PTFE. A chemically resistant sealing material for strong acid and alkali applications with low to medium mechanical requirements at low to medium temperatures.
Temperature: -196°C to 200°C
Pressure: 62bar @ 0°C & 0bar @ 200°C



KLINGERTop-chem 2005, economical acid grade modified PTFE. A chemically resistant sealing material for strong acid applications with high mechanical and temperatures requirements.
Temperature: -196°C to 200°C | **Pressure:** 62bar @ 0°C & 40bar @ 250°C



KLINGER Hygrade LS, highly compressible expanded PTFE. A soft flexible sealing material, resistant to most chemicals. Ideal for use with glass-lined and enamel flanges.
Temperature: -196°C to 200°C | **Pressure:** 60bar @ 50°C & 10bar @ 200°C



KLINGER PSM, pure exfoliated graphite mechanically bonded to a tanged 316SS insert. A sealing material with excellent chemical and thermal capabilities. Used in chemical, petrochemical, steam and thermal processes.
Temperature: -196°C to 450°C | **Pressure:** 80bar



KLINGER SLS, pure exfoliated graphite chemically bonded to a solid 316SS insert. A sealing material with excellent chemical and thermal capabilities. Used in applications where bolt load is limited or flanges are damaged.
Temperature: -196°C to 450°C
Pressure: 45bar

KLINGERSil C4400, manufactured from aramid fibre with a nitrile binder. A high quality, general purpose sealing material for use in many industrial applications. Excellent fluid swell and gas permeability properties.



Temperature: -100°C to 180°C
Pressure: 60bar **

KLINGERTop-mic, manufactured from a blend of fibres and mica with a nitrile binder. A sealing material with outstanding flexibility and excellent sealability in steam. Resistance to oils, fuels, hydrocarbons and other chemicals.
Temperature: -196°C to 300°C | **Pressure:** 45bar **



KLINGERTop-graph 2000, manufactured from expanded graphite and synthetic fibres with nitrile binder. A sealing material with outstanding flexibility and excellent sealability in steam. Resistance to oils, fuels, hydrocarbons and other chemicals.
Temperature: -196°C to 300°C | **Pressure:** 60bar **



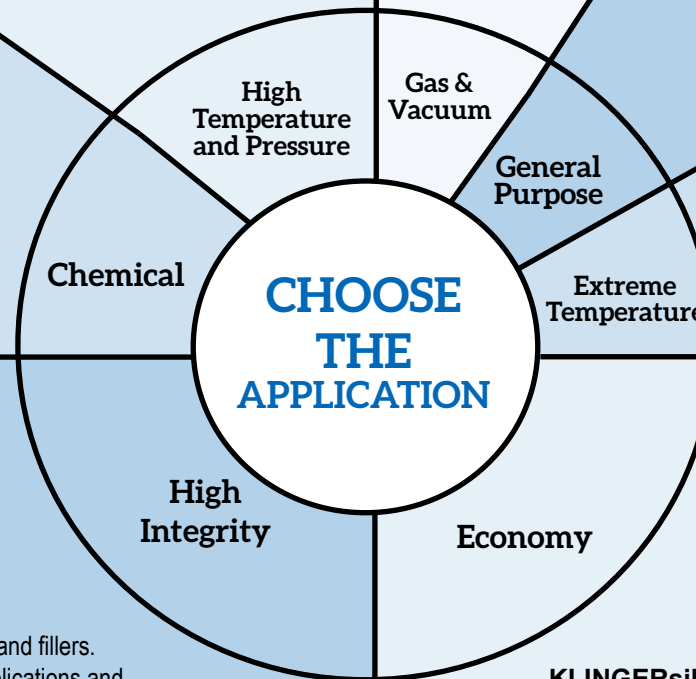
KLINGERSil C4500, manufactured from carbon fibres with a nitrile binder. A sealing material with outstanding resistance to alkaline media and steam. Resistance to oils, fuels, hydrocarbons and other chemicals.
Temperature: -196°C to 250°C | **Pressure:** 60bar **



KLINGERSil C4430, manufactured from synthetic and glass fibres with a nitrile binder. A sealing material with high temperature resistance in steam, oils, fuels, hydrocarbons and other chemicals. Suitable for potable water.
Temperature: -150°C to 250°C | **Pressure:** 60bar **



KLINGERmilam PSS is an asbestos free sealing material based on mica reinforced with stainless tanged insert. It is specifically designed for hot, dry gas applications up to 1000°C. However, the outstanding chemical resistance of mica makes the gasket suitable for a wide range of applications.
Temperature: 900°C
Pressure: 15bar @ 600°C & 5bar @ 900°C .



KLINGER Ring Type Joint, manufactured from various steels. A high integrity gasket with excellent high pressure, high temperature and chemical resistance. Used extensively in piping flanges.
Temperature: -196°C to 1000°C | **Pressure:** 500bar *



KLINGER Maxiflex (Spiral), a semi metallic gasket manufactured from a variety of steels and fillers. A gasket with excellent pressure, temperature and chemical resistance. Very tolerant of cyclic applications and misaligned flanges.
Temperature: -196°C to 1000°C | **Pressure:** 300bar *



KLINGER Maxiprofile (Kammprofile), a semi metallic gasket manufactured from a variety of steels and soft sealing faces. A gasket with excellent pressure, temperature and chemical resistance. Used extensively in equipment girth flanges.
Temperature: -196°C to 1000°C | **Pressure:** 250bar *



KLINGERSil C4324, manufactured from aramid and glass fibre with a nitrile binder. An economical sealing material for use in general industrial applications. Resistance to oils, fuels, hydrocarbons, low pressure steam and water.
Temperature: -50°C to 150°C | **Pressure:** 40bar

KLINGERSil C8200, manufactured from a blend of fibres with an acid resistant binder. A sealing material designed for aggressive chemical environments. Resistance to acids, alkalis, ketones, aldehydes and refrigerants.
Temperature: -25°C to 100°C | **Pressure:** 60bar @ 50°C & 27bar @ 100°C



KLINGERSil C4243, a sealing material for general purpose applications. Suitable for liquids and gases at low pressures and temperatures. Good chemical resistance to water and oil in non-critical applications.
Temperature: -25°C to 150°C | **Pressure:** 40bar @ 100°C & 0bar @ 150°C

NOTE:

A common misconception is that the suitability of a gasket for any given application depends upon the maximum temperature and pressure conditions. This is not the case. It is always advisable to consider flange quality, bolt load, bolt strength, chemical resistance, pressure, temperature, installation procedures, misalignment and any additional stresses such as fluctuating loads. All of the above may significantly affect the suitability of the gasket in the given application. Please contact technical@klinger.co.za for technical support.

* Temperature rating is dependent on the correct selection of construction materials

** Steam temperature should not exceed 180°C



KLINGER
Gaskets



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THE FOLLOWING GUIDELINES ARE DESIGNED TO ENSURE THE OPTIMUM PERFORMANCE OF A RELIABLE FLANGE CONNECTION

Choosing the gasket	There are many factors which must be taken into account when choosing a gasket material for a given application besides temperature, pressure and chemical compatibility, including, but not limited to compressibility, recovery, stress relaxation, fluid swell, gas permeability and seating stress. Please refer to the information given in our brochure or contact technical@klinger.co.za
Media resistance	Media resistance of a gasket material must be considered in conjunction with temperature and concentration.
Gasket thickness and gasket width	The gasket should be as thin as technically possible in order to reduce "blow out forces". Gasket thickness is directly dependent on flange condition and material compressibility, poor condition flanges require thicker gaskets with higher compressibility. To ensure optimum performance a minimum thickness to width ratio of 1/5 is required, ideally 1 to 10.
Flange connection	Ensure all remains of old gasket material are removed and the flanges are clean, in good condition, have the appropriate surface finish for the chosen gasket and are aligned in accordance to ASME PCC-1-2019 Appendix E.
Gasket compounds	Ensure all gaskets are installed in a clean and dry state, the use of gasket compounds are not recommended as this may be detrimental to gasket performance and the load bearing characteristics of the material.
Gasket dimensions	Ensure gasket dimensions are correct. The gasket should not protrude into the bore of the flange and should self-align centrally on the seal area.
Bolting	Wire brush studs or bolts and nuts to remove any dirt on the threads. Ensure that the nuts can run freely down the thread before use. It is advised to replace the old nut with a new nut on the side that is to be torque tightened. Please contact technical@klinger.co.za for recommended bolt loads and torque values. Liberally apply lubricant to the bolt and to the nut threads as well as to the face of the nut and washers to reduce friction when tightening. We recommend the use of a bolt lubricant which ensures a friction coefficient of about 0.10 to 0.14.
Joint assembly	It is recommended that the bolts are tightened using a controlled bolt tightening method such as torque or tension, this will lead to uniform gasket stress and extended gasket service life. If using a torque wrench, ensure that it is accurately calibrated. For torque settings please contact our Technical Department, technical@klinger.co.za who will be happy to assist you. Carefully insert the gasket, taking care not to damage the gasket sealing faces. When torque tightening the bolts, mark the flange with an appropriate bolt tightening sequence, ASME PCC-1-2019, Table 3, cross tighten the bolts in three stages to the required torque value. Please contact technical@klinger.co.za should you require a cross bolt tightening sequence: Finger tighten all nuts and adjust the bolt loads with a spanner to align the flanges. Do not use excessive force to align your flanges. Carry out torque tightening, making at least three complete cross bolt tightening sequences i.e. 30%, 60% and 100% of final torque value. Continue with circumferential passes until none of the nuts move, torquing the bolts or studs in a clockwise sequence. Please contact technical@klinger.co.za if you require a fully equipped and trained bolt tightening team to assist with your bolt torque tightening or tensioning requirements.
Tightness of the flange connection	Basically the flanged joint tightness depends on the applied surface stress during installation, as well as on the remaining surface stress at operating conditions. Gaskets installed with higher gasket stresses exhibit a longer service life than gaskets installed with lower gasket stresses. Please contact technical@klinger.co.za for recommended bolt loads and target torque values.
Re-tightening	Provided that the above guidelines are followed re-tightening of the gasket after joint assembly should not be necessary. If re-tightening is considered necessary, then this should only be performed at ambient temperature before or during the first start-up phase of the pipeline or plant. Re-tightening of compressed fibre gaskets at higher operating temperatures and longer operating times may lead to a failure of the bolted flanged connection and possible blow out. Please contact technical@klinger.co.za for recommended bolt loads and target torque values.
Re-use	For safety reasons and plant reliability, never re-use gaskets.

Gauteng (H/O) 011 842 8300 | Honeydew 011 794 7594 | Cape Town 021 511 1337 | Durban 031 579 1041 | Middelburg 010 200 9814
 Mossel Bay 010 010 0797 | Nelspruit 013 010 0092 | Port Elizabeth 041 484 1424 | Richards Bay 035 789 0595
 Sasolburg 016 976 2952 | Secunda 017 639 1582 | KLINGER Zambia +260 979 154 892



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